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HYDATID TUMORS IN THE BRAIN.

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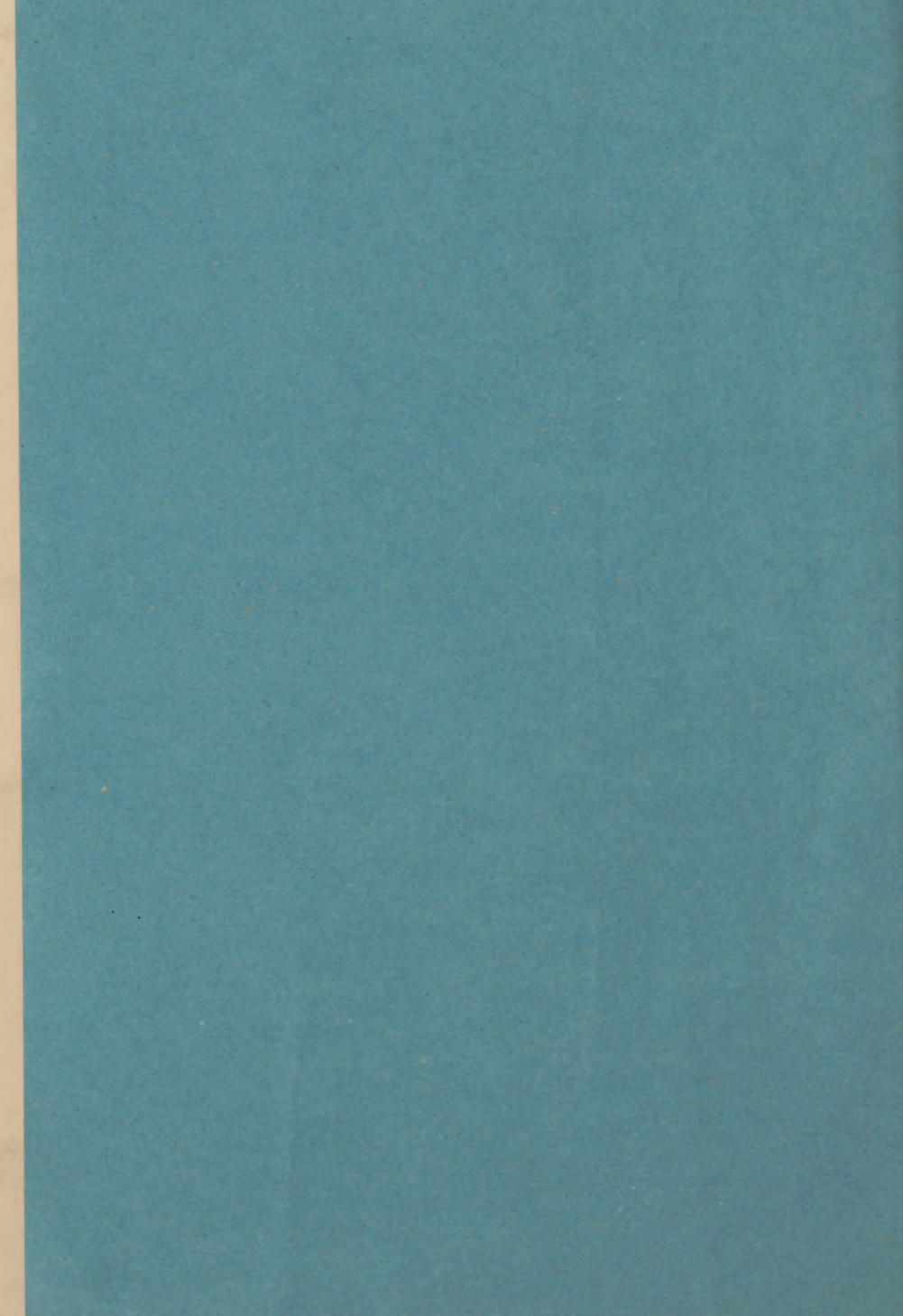
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243

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HYDATID TUMORS IN THE BRAIN.

By the term hydatid tumors in the brain, we mean the intra-cranial occurrence of either the echinococcus or the cysticercus cellulosæ in man. The former is the embryo of the *tænia echinococcus* which has never been known to attain maturity except in the dog. The latter is the embryo of the *tænia solium*, which is most frequently found in man, the hog, and the rabbit, but not unfrequently in the dog and the common rat; and has been known to exist in the ape, the bear, and the deer.

The history of these strange parasites is only traceable to the oblivion of the unknown; before the time of Aristotle they were known to be associated with hydatid tumors, and were so regarded by Hippocrates; although it was left for Pallas to describe the echinococcus as a separate parasite, in 1766, and for Göze to observe the same of the cysticercus in 1784.

The Mosaic law, which denounced as unclean all those animals which split the hoof and did not chew the cud, or those which chew the cud and did not split the hoof, was undoubtedly based on the existence of these parasites, for it is a well-known fact that the hog, and a species of hare common in the east, were particularly rife with the disease produced by these parasites. Nor were all the animals considered clean by the Mosaic law even free from this loathsome disease; for we find, on referring to the older works on sheep husbandry, the same disease treated of, under the synonyms of "turnstick," "sturdy," and "staggers," and more recently as "hydatid polycephalis cerebrais;" which proved to be very fatal in the flocks where it prevailed, and was described as a many-headed hydatid, each of which was mounted with a disk of sharp hooklets. The development of these parasites from the tape-worm through



all their multiple metamorphoses until again a tape-worm, was for a long time enshrouded in mystery; and it was not until comparatively recently that all the links in the chain were finally united.

In order that our subject proper may be better understood, we will give but a brief outline of the development of these *tæniæ*, which, during a certain stage of their development, may form cysts in the brain, or its membranes, of man. From Küchenmeister, the eminent German authority, we have crystalized the following:

Division A.—*Tænia echinococcus*. 1. Is found only in the dog, has but four joints, the last of which contains the genital organs, and also the ripe eggs. 2. When these eggs find their way into the stomach of man they migrate, as soon as germination takes place, through the system and there develop the *echinococcus* which first form the so-called mother, or brood cysts. 3. These mother or brood cysts may develop as follows: (a.) The scolices or heads, directly from the mother cysts, when they are called *echinococcus scolicipariens*, and is frequently known under the name of *E. veterinorum*, owing to its frequent occurrence in the domestic animals, and is distinguished from the fact of its having from 28 to 36 hooklets. (b.) The mother cysts may develop daughter cysts or even granddaughter cysts, and from either of these latter cysts may develop the scolices, in which case they are called the *E. altricipariens*, and from their frequent occurrence in man they are also known as the *E. hominis*, and can be distinguished by the fact of their having from 46 to 52 hooklets. (c.) The mother cysts may develop scolices externally, as is generally the case in animals, and from this fact they have received the name of *exogens*. (d.) Or the mother cysts may develop scolices internally, as is most frequently the case in man, when they are termed *endogens*. (e.) Lastly, the mother

cysts may not develop scolices at all, when they are known as acephalocysts.

When these cysts or their scolices find their way into the stomach of the dog they develop into the *tænia echinococcus*; but should they find their way into the stomach of any other animal they will not reach maturity; although the embryo in the form of hydatid cysts will develop in man, as well as others of the animal kingdom, and will live in this embryonic state for years, or until it destroys the life of its host, yet it has only been known to reach maturity when eaten by the dog.

Division B.—*Tænia solium*. 1. It is found in man and the hog; and when matured gives off proglottides or the so-called joints, which, like the last segment of the tape-worm of the dog, contains the genital organs and the matured eggs. 2. These entire segments, or only a part of the eggs, may find their way into the stomach from which, in an embryonic state, they migrate into the system, and there develop into the *cysticercus cellulosæ*, which passes through a series of metamorphoses similar to that of the *echinococcus*.

The so-called "measly" pork owes its peculiarities to the presence of these *cysticerci*, which, when eaten by man or other animals, will develop into a *tænia solium*, or tape-worm. Although we have two distinct species of *tænia* which give rise to hydatid tumors, and furnish a wide field for study, yet we do not think a special study of either, except so far as they interest us clinically, is within the province of this paper; and would respectfully refer those who care to look up the subject in detail, to Küchenmeister or Leuckart. From a clinical standpoint it matters but little which species is producing the intrusion on the economy, the results to the patients are the same.

It is true, as a rule, that the cysts or hydated tu-

mors produced by the echinococcus are larger than those produced by the cysticerci, yet the latter make up for the deficiency in size by multiplicity in numbers. When hydatid tumors are opened and their contents examined with the microscope they may be found to contain complete scolices or just the scattered hooklets of broken and incomplete heads. When scolices cannot be found free in the liquid of the cyst, they may be found by examining the brood capsule, or lining membrane of the same, except in the case of acephalocysts when no scolices or isolated hooklets can be found. These hydatid tumors contain a pale straw-colored fluid which usually contains no albumen, is freely charged with chloride of sodium, and contains a liberal quantity of succinic acid, which is not unfrequently found combined with lime or soda; also, traces of grape sugar, together with other chemicals, are generally found present.

Hydated cysts of one or the other of these tænia have been found in almost all parts of the human economy, but especially in the liver, the cellular tissue, the brain, the spinal cord, the eye, the spleen, the lungs, kidney, supra-renal capsules, heart, and even in the osseous system.

Küchenmeister, who collected 88 cases of cysticercus of the brain, found the cysts 49 times in the membranes, six of which were on the dura mater, 11 on the arachnoid, 23 on the pia mater, and 9 on the choroid plexus. Fifty-nine on the surface of the cerebrum, 41 in the cortical substance, 19 in the white substance, 18 in the ventricles and aqueduct, 17 in the corpora striata and anterior commissure, 15 in the optic thalami and gray commissure, 4 in the corpora quadrigemina and the pineal gland, twice each in the trigona olfactoria, corpus callosum and medulla oblongata, once in the olivary body, and 18 times in the cerebellum. In the above, 18 per cent. were without any symptoms, in 6 they were only trifling, in 5 epilepsy alone was present, in 4 epilepsy with

mental debility, in 15 epilepsy with paralytic symptoms, in 24 insanity without epilepsy, of which 7 were without motor or sensory disturbances, 17 had lameness, cramps, hemiplegia, paralysis and muscular twitchings, while out of all only 24 had epilepsy.

The size and growth of these hydatid tumors varies according to the space afforded them for development. It seems that their size depends more on the pliability of the tissues, rather than the quantity and quality of the nourishment furnished. The danger attending the presence of these hydatid tumors depends very much on their location and size. When they occur in the subcutaneous cellular tissue it is not attended with any great danger. I know of a young man who is under the care of my friend Dr. J. W. Craig, in whom they can be counted by the hundreds, notwithstanding the doctor has cut out several scores already, and yet the young man is apparently in good health. When they occur in the muscular tissue they become more and more injurious in proportion to their depth and the importance of the structures involved. Their occurrence in the anterior chamber of the eye may not occasion any grave symptoms, but when they occur in the posterior chamber; the vitreous, the retina, or under the retina, as observed by Sömmering, Schott, von Graefe, Mackenzie, Baum, Esthlin Sickel, and others, they produce the most serious trouble. When they locate themselves in the brain or its membranes, they occasion a multitude of symptoms, which are modified by their location, as will be best observed in the cases I am about to report in this paper, and which, it will be readily observed, renders the diagnosis exceedingly difficult and obscure.

CASE I.—Dr. B., æt. 46, a large, strong, hearty man, who was engaged as a traveling doctor, was taken ill in the summer of 1880; at first was easily fatigued, mentally and physically, but able to be up and around and practice his profession, which was soon followed with general malaise, which gradually grew

worse until he had lost all inclination for business; this was followed by gradually increasing vertigo, could not sit upright long at a time, which became so bad as to almost disable him from walking across the room, or sitting up at all; when he attempted to walk would pitch forward on the face. As the disease grew worse he was taken with vomiting, with or without food, which assumed a reflex character. From the first there was a constant tendency for the head to drop forwards, and toward the last, when not lying down, would sit with the head dropped forward, which tendency manifested itself even when lying down. He was extremely nervous, and toward the last his appetite, which had gradually failed him from the first, failed entirely, except that he had an incessant desire to drink milk, which was immediately vomited after entering the stomach. The bowels were regular and urine normal. There was a gradually increasing stupor, with some mental aberration toward the last, which continued, together with an increase of all the other symptoms, until the patient died from collapse March 3d, 1881. The post-mortem revealed sclerosis of the gray portion of the brain, with softening in the right cerebellum and in both ventricles. In the right lateral ventricle was found a hydatid tumor the size of the first joint of a man's thumb, which was surrounded with some pus and considerable effusion.

CASE II.—J. W. K., æt. 28, a strong, hearty laborer, was taken sick in spring of 1879 with pain in the left side. No difficulty with the hearing, complained of trouble from coughing with pain in the chest; partial paralysis of right arm. In February, 1881, had a similar attack; also one in 1882, which was followed with another in December, 1883, when he commenced to have an offensive discharge from the left nostril. In May (23d), 1884, he was taken with a chill, followed with pain in the left side of the head. Had a troublesome cough of a nervous character; appetite good, which continued to the last, with no vomiting; bowels regular; no alteration of the temperature, but some nervous excitability of the pulse, which would often rise above or drop below the normal, and in a short time return to the normal again. Would often complain of a cold spot on the top or left side of his head. Was troubled at times with diplopia, and flashes of light in both eyes. Had been able to do manual labor, however, between each of the other attacks, and even up to the commencement of this last attack, at which time he had an exaggeration of all the former symptoms excepting the paralysis; but more especially the pulmonary symptoms, which gave rise to coughing and dyspnea. These symptoms increased until he died from general exhaustion June 1st, 1884. Assisted by Dr. J. Harvey Craig I made a post-mortem five hours after death, and found a large hydatid tumor located in

the left lateral ventricle, nearly as large as a hulled white walnut. There was considerable effusion, with softening and destruction of the brain substance on the left side, and thickening of the membranes of the cerebellum and spinal cord, with here and there spots entirely destroyed by softening. An examination of the rest of the body revealed nothing of an abnormal character.

CASE III.—O. H. B., æt. 52, a strong, robust man, was accustomed to doing considerable mental and physical labor. Commenced complaining in the spring of 1882, with general debility accompanied with some dyspnoea and difficulty in deglutition, but had no trouble digesting his food after getting it swallowed; bowels were normal, and urine natural at first, but contained some albumen toward the last. Was advised to take a trip for his health, but returned feeling worse; both the asthmatic symptoms and the difficulty in swallowing were much worse. His gait became unsteady and staggering, but no paralysis, and mind clear and no tendency to spasms. These symptoms gradually became worse until the patient died of exhaustion December 30, 1883. The post-mortem showed evidence of athromatous degeneration of the cerebral arteries, more especially those in the circle of Willis, but little effusion. Two hydatid tumors were found in the right lateral ventricle, and three in the left lateral ventricle, varying in size from a grape down to that of a pea.

CASE IV.—Mrs. McS., æt. 57, an ordinarily healthy female, had been married and raised a family, but was now a widow; had "changed life" at the age of 50. Had not been feeling well for some time, but commenced to grow worse in 1877, when she was very much debilitated; some mental aberration, among the first of which was that of imagining she smelt the fumes of a tobacco pipe. She next became contrary in almost everything, which was the more noticeable on account of her previously agreeable disposition; she imagined every person wanted to poison her. Her general lassitude increased, her gait became staggering, and she soon lost all ability to maintain the upright position, and when attempted, had a tendency to pitch forward; complained constantly of a cold spot on the top of her head. She had a constantly sick stomach, with vomiting only toward the last; a constant desire to urinate, was very thirsty and drank a great deal; had some fever at times in the latter part of her illness; toward the last the pain in the head subsided; had great difficulty in deglutition, very great dyspnoea, some paralysis on the right side. A week before she died became blind and deaf, with complete aphasia, and finally went into a comatose condition and died March 12th, 1884. The post-mortem revealed two hydatids in the right and three in the left ventricle, with marked cerebral effusion and general softening of the entire brain substance.

For the first, third and fourth cases I am indebted to my personal friend and fellow-townsmen, Dr. J. W. Craig, although the writer was present at the necropsies of all excepting case No. III, but had the pleasure and profit of examining the tumors removed in that case.

In our opinion, the first and second cases were produced by the *ecchinococcus*, while the third and fourth were the result of the *cysticercus cellulosa*.

By permission I quote from a private letter received from Prof. Wm. Pepper, of the University of Pennsylvania, in which he says: "I have met with two cases, but unfortunately, the clinical records are so imperfect that I shall not publish them. The autopsies were, however, carefully performed. There was one hydatid in the retina in one case, with a cyst in the right anterior lobe of the brain. In the other the cysts were found on the left side of the base. They were both hospital cases, and no record could be obtained as to their previous history. The one is undoubted as to its character, while in the other it is believed that the cysts were hydatid from their general gross appearance."

For a number of the following synopses of interesting cases of hydatids of the brain and spinal cord, I am not only indebted to my personal friend, Dr. N. Senn, of Milwaukee, for kind assistance in collecting them, but also for their translation; also to Dr. Robert Herdegen, of Milwaukee, for his assistance in the same.

Dr. J. Klob reports two cases of *cysticercus cellulosa* in the brain, in the *Vienna Weekly*, Nos. 8 and 9, 1867. The first case was that of a man aged 54, who two years previously suffered from rheumatic pains in the lower extremities. For some time gradual loss of memory. Pupils somewhat dilated; speech slow, but plain; difficulty in hearing; movements of the upper extremities slow and with effort; toward the last the patient was troubled with incontinence of urine, lower extremities paralyzed. A post-mortem

examination showed the dura mater to be tense, brain swollen, left hemisphere of the brain somewhat larger than the right. On opening the left lateral ventricle, a large cyst with delicate walls escaped, which contained a clear, watery fluid. The cyst was as large as a medium-sized apple. From the under surface a pedicle of gray color was given off, to which two smaller cysts were attached. A peculiar pigment was observed, arranged symmetrically, in the centre of which were found the hooklets of the cysticercus.

The second case was a woman 43 years of age, who after intense fright suffered from severe headache, and a few days later was seized with convulsions. These convulsions appeared at short intervals, and assumed an epileptiform character. The convulsive movements affected mostly the left side of the body. On the eleventh day of illness she died, death being preceded by collapse and stupor. On post-mortem examination the dura mater was found tense. In the pia mater, over the right cerebrum, were found chalky nodules, which were identified as cysticerci which had undergone calcification. On the lateral surface two recent cysticerci were found. In the posterior portion of the right side of the brain a closed cavity the size of a walnut was found, which communicated with another cavity the size of a pea by a narrow channel. At the point where both of these cavities joined was found a calcified cysticercus.

Drs. W. and G. Markle report a case of *cysticercus cellulosus* in the cerebellum in the German Archives of Clinical Medicine, vol. iii, p. 297, in which the patient was a strong boy of 13, who was taken ill with severe pain and stiffness of extensor muscles of the neck, which abated slowly and imperfectly. After a few months, severe attacks of headache were complained of, which were accompanied at times by vomiting. These severe attacks were succeeded by sleep resembling stupor. Death occurred suddenly. The post-mortem revealed in the left lobe of the

cerebellum a tumor the size of a hazel-nut, with a resistant yellow nucleus. The entire white substance of the cerebellum was softened and gelatinous. The swelling was surrounded by a layer of pus 1 mm. in thickness. The tumor consisted of a cyst, which contained detritus, in the centre of which a well preserved cysticercus was found.

A similar case is reported by G. Markle, in the person of a boy 10½ years old, previously in robust health, who was taken ill with headache and vomiting. In one of these attacks of headache he became restless and delirious, which was followed by unconsciousness, stupor and death. At the necropsy, a cyst the size of a cherry was found in the infundibulum, which proved to be a cysticercus cellulosa. The gyri of the brain were flattened, the consistency of the white substance was firm.

Dr. Marks, in writing of the echinococcus in the brain (Virchow in Hirsch's yearly report, 1873, vol. I, p. 640) reports a case of echinococcus in the brain which is of interest on account of its location in the left temporal lobe of the brain. The patient, who was 40 years of age, had had an attack of dizziness during the month of December, 1871. In July, 1873, he was seized with another attack, which was followed with facial paralysis of the right side, complete paralysis of the left upper extremity, partial paralysis of the left lower extremity. Sensation in both right arm and leg diminished. His condition both mentally and physically gradually became worse, especially the aphasia. He at last passed into a stupor, had incontinence of urine, followed by death. The autopsy showed great tensivity of the dura mater, the convolutions of the cerebrum were flattened, but more on the left than on the right side. On the outer side of the left temporal lobe a green discolored spot the size of a dollar was found, below which, at the depth of 2 mm., an echinococcus cyst the size of a fist was found, which contained a clear fluid. The cyst could

be removed with ease from the substance of the brain. The right half of the pons was flattened, while the remaining portions of the brain were not materially changed.

Griesinger, who has collected over 70 cases of these parasitic affections of the brain, 54 of which he describes minutely, 21 of which were his own cases, found their occurrence in the spine very rare, of which Dr. Otto Hebold reports two very interesting cases, which are recorded in vol. XV, No. 3, p. 812, of the *Archiv für Psychiatrie*, Berlin, 1884; for the translation of this, from which I only give a synopsis, I am indebted to Dr. Henry Ruess, of Mansfield, Ohio:

The first patient was an idiotic female, aged 63, of healthy parentage, but who had an idiotic half-sister. Early in life she became hysterical. Seven years ago was troubled with hallucinations, a year later was taken with epileptic convulsions, which occurred frequently, together with vomiting, two years later became blind, with partial paralysis, and perverted sensibility, difficult articulation, general depression, followed by death. The autopsy revealed cysticerci under the pia mater of the spine and brain, also in the cortex of the latter. One was found free in the lateral ventricle, also one in the muscle of the heart, and under the pleura costalis.

In the same article he reports another case which occurred in a female aged 65, who was of an irritable disposition, especially during the menstrual period, who was taken ill in 1876, showing signs of brain irritation, with hallucinations in hearing. At times had attacks of religious exaltations, at others tore her hair, and at times was very destructive. After being removed into the asylum her symptoms grew worse, would inflict injuries upon herself and others; she was exceedingly filthy, would eat her own and others' faeces. In 1877, symptoms of pressure on the brain, with epileptic attacks, with unconsciousness, had

vomiting of green matter, slight paralytic symptoms in the right upper extremity. Her condition, with occasional short improvements, gradually grew worse, which was attended with difficult articulation. In 1879 partial and total blindness set in; from that time to 1881 and 1882 paralysis of lower extremities; toward the last, in 1883, had to be carried around. Epileptic attacks preceded her death, which occurred in the summer of 1883. The autopsy revealed cysticercus the whole extent of the dura spinalis as high as the first dorsal vertebra, also over the right anterior and lateral division of the medulla. Marked adhesions of the dura to the cranium. Scattered under the membranes and over the brain in both lateral ventricles were cysts of the cysticerci from the size of a pea to that of a bean, which were filled with a clear yellowish liquid. Also in the right posterior wall of the chest, under the pleura, were found four cysts about the size of a bean, also one under the left pleura costalis. The writer observed that only those in the ventricles were well developed, the rest were imperfectly developed, and that those in the substance of the brain were smaller, and had a tougher capsule. A few reached into the white substance of the brain, but not a single one was found there alone; the majority being in the cortical substance of the brain, in different parts of it. After making a careful analysis, the author arrives at the conclusion that the case was primarily one of insanity, which led to the eating of *fæces*, by which she became infected with the cysticerci, which developed a new train of symptoms still later, which subsequently produced death.

Ulrich, in abstract in Virchow, 1872, No. 2, p. 16, reports a case of cysticercus in the brain and spine both, in an insane person. Regarding this case, he says the insanity was not caused by the cysticercus, but the cysticercus was the result of the extremely filthy habits of the person.

Vates—abstract in Virchow, 1870, No. 2, p. 60, reports a case of a young man who died at the age of 21, who was under his care for two years previous to his death, and complained of headache, weakness of legs, hemiplegia, light delirium and stupor, followed by death. Autopsy revealed a hydatid tumor the size of an ostrich egg in the left hemisphere of the cerebrum. The patient died suddenly, but notwithstanding his stupidity, he was able to answer questions intelligently up to the time of his death.

Sutherland—in Virchow, 1873, No. 2, p. 67, reports the occurrence of an echinococcus between the chiasm and pons, with compression of the two oculomotors, and destruction of the ventricles. His symptoms were intense headache, frequent vomiting, tinnitus aurium, deafness, and impaired vision.

Schlott—in Virchow, 1873, No. 2, p. 68, reports a case occurring in a former soldier, who took sick with frequent fits of giddiness, headache, nausea, and heaviness of his limbs, tongue blue and swollen, oscillations before the eyes, diplopia, staggering gait. His bodily and mental capabilities grew weaker, first vomiting and regurgitation, afterward would swallow with great avidity. Spontaneous discharge of fæces and urine, his language became stammering, choreic movements, subsultus tendinum, and finally died with pulmonary œdema. The autopsy revealed numberless cysticeri, from the size of a pin-head to that of a pea, in the dura over the base of the brain, as well as in the dura of the cerebrum, in the substance of the cerebrum and cerebellum, and also on the surface of the same, and in the ventricles and in the great ganglions, besides, they were even found in the muscles throughout the body.

Westphal—in Virchow, 1873, vol. 2, p. 68, reports an interesting case, with recovery, of echinococcus observed in the Charité, in Berlin, in a young man aged 17. The symptoms were headache, nausea, right exophthalmus, and protrusion of the right tem-

poral bone, hemiplegia on the left side. These symptoms came on step by step, with exacerbations and remissions. The protrusion of the right parietal region became large, extending to the vertex. In four weeks after he entered the hospital, by the finger one could feel a perforation of the bone about an inch above the outer angle of the right eye, four days later there was another perforation near the first one. By and by, from these openings a fluctuating tumor appeared under the skin, and the tumor was diagnosed echinococcus. An exploratory puncture failed, and an incision was made, which soon discharged about ninety cysts. Ten days later, by blowing his nose there came out of the left nostril a large and two smaller cysts. When the patient left the hospital a few weeks later, he was free from headache and hemiplegia, but the circumference of the right side was three inches larger than the left, and the exophthalmus still continued, with blindness. The openings in the bones still existed, the pulse varied from 90 to 150, with a normal temperature.

Eichorst, vol. II, page 708, says the echinococcus usually consists of but one cyst, seldom multiple, but in the case of Espinosa there were 52 cysts under the arachnoid membrane.

The frequency of this disease depends on at least three factors: 1, The prevalence of making dogs household pets, as in Iceland, where it is estimated by some writers that at least one-tenth of the population suffer from echinococci, which is undoubtedly due to this cause. 2, The eating of half-cooked "measly pork," which gives rise to numerous tapeworms, and they in turn to the cysticerci. 3, The filthy habits of many, together with the increase of population, which necessitates the close commingling of all classes.

Hydatid tumors are found to be more frequent in old persons than in young persons, although they may occur at any age, and are more apt to be found

among the poorer members of the population than among those in affluent circumstances, but sex does not appear to make any difference as to their frequency. The tape-worm and its embryo may exist in the same person at the same time, or a tape-worm and the echinococcus may exist in the same subject at the same time, but a *tænia echinococcus* and its embryo never has been known to exist in man at the same time. The prognosis in this disease as a rule is unfavorable when it is intra-cranial; only a few such cases of recovery are on record.

The treatment of these cases is also very unsatisfactory so far as therapeutic remedies are concerned. The salts of mercury and iodide of potassium have been, however, liberally used, with a view of destroying them by their antiparasitic effects, as well as for their alterative virtues. Tr. of kamala, in doses of from 30 to 40 drops three times a day, has been used freely with some reputation for good. Electricity has filled its place in the catalogue of remedies used in this malady with a questionable reputation.

When accessible the most positive benefits are derived from surgical interference, by which the cysts are emptied, by laying them open with the bistoury; and now that surgeons are beginning to deal with the brain, as with other parts of the human economy, and more and more liberties are taken with it annually, it is hoped that sufferers from this dreadful disease may find a source of relief ere long at the hands of the skillful surgeon.

Although this disease, except in Iceland, is comparatively rare, and perhaps more so in America than in continental Europe, yet Dr. Osler states, in regard to the echinococcus disease in America, that he has collected from various sources 61 cases. (See transactions of Canada Med. Association, 1882, p. 354.)

With the steady increase of our population, unless active preventive measures are inaugurated we must expect a corresponding increase in this disease,

which will steal in on us as a thief in the night, and cause many a premature death, unless we remove the causes which favor its production and development, viz: Dogs as household pets, the use of half-cooked unhealthy pork, together with all general unsanitary surroundings.

April 20th, 1885.



